






**FUNCTIONALIZED ELASTOMER NANOCOMPOSITE**

**Patent number:** WO2004005388  
**Publication date:** 2004-01-15  
**Inventor:** GONG CAIGUO (US); TSOU ANDY H (US); DIAS ANTHONY J (US); KARP KRISS R (US); POOLE BEVERLY J (US)  
**Applicant:** EXXONMOBIL CHEM PATENTS INC (US); GONG CAIGUO (US); TSOU ANDY H (US); DIAS ANTHONY J (US); KARP KRISS R (US); POOLE BEVERLY J (US)  
**Classification:**  
- **international:** C08K3/34; C08F8/00; C08C19/28  
- **european:** C08K3/34B, C08F8/00  
**Application number:** WO2003US17204 20030530  
**Priority number(s):** US20020394152P 20020705

**Cited documents:**

 WO0224759  
 WO0034393  
 WO0196467  
 US5665183  
 FR2189424  
more >>

**Abstract of WO2004005388**

An embodiment of the present invention is a nanocomposite comprising a clay and an elastomer comprising at least C2 to C10 olefin derived units; wherein the elastomer also comprises functionalized monomer units pendant to the elastomer. Desirable embodiments of the elastomer include poly (isobutylene-co-p-alkylstyrene) elastomers and poly(isobutylene-co-isoprene) elastomers, which are functionalized by reacting free radical generating agents and unsaturated carboxylic acids, unsaturated esters, unsaturated imides, and the like, with the elastomer. The clay is exfoliated in one embodiment by the addition of exfoliating agents such as alkyl amines and silanes to the clay. The composition can include secondary rubbers such as general purpose rubbers, and curatives, fillers, and the like. The nanocomposites of the invention have improved air barrier properties such as are useful for tire innerliners and innertubes.

---

Data supplied from the **esp@cenet** database - Worldwide